plan2045 Base Year 2017
Socioeconomic Data Approval

RRTPO TECHNICAL ADVISORY COMMITTEE MEETING

November 13, 2018

Presentation by:
Sulabh Aryal, AICP
Senior Planner
RRPDC
**plan2045**

- **plan2045** is the next long-range transportation plan for the Richmond region which is a significant decision tool to guide how the RRTPO and its partners will meet the transportation needs of the Richmond region over the next 20 years.

- Changes in federal transportation regulations require **plan2045** to have as its foundation a performance-based planning focus.

- **plan2045** will apply a systematic review of transportation system performance – past, present and possible future – to define the regions investment priorities.

- Various Tools will be used for accessing transportation system performances – Congestion Management Process (CMP), Annual Performance Measures, Richmond Regional Bridge and Culvert Reports, EJ Accessibility Analysis and Regional Travel Demand Model (Richmond/Tri-Cities Model)
• The Richmond/Tri-Cities (RTC model) regional travel demand model will be a critical tool for assessing transportation system performance for *plan2045*.

• The RTC model will be used to identify future needs for the highway and transit network, and to evaluate the potential impact of investments.

• System Performance Measures: Volume/Capacity Ratio, Vehicles Miles Traveled, Vehicle Hours Traveled, Average Congested Speed by facility type, travel time improvements, transit ridership and accessibility improvements to major destinations.

• Scenarios – Investment/Growth Scenarios
Richmond/Tri-Cities (RTC) Model

• The RTC Model has a current Base year of 2012 and Future year of 2040.

• For plan2045 the RTC model needs to be updated to a base year of 2017 and future year of 2045.

• RRTPO and Tri-Cities MPO are working with VDOT modeling staff and their consultant to update the RTC model. Model is scheduled to be completed by June 2019.
Socioeconomic Data (SE Data)

• The primary purpose of the Socioeconomic Data is to provide input into the Richmond Regional Transportation Planning Organization’s Regional Travel Demand Model (The RTC Model).

• The Socioeconomic Data (SE Data) provides estimates and projections of population, employment and other socioeconomic data of the Richmond Region within small geographic areas called Transportation Analysis Zones (TAZs).

• The data is also used by local governments, regional and state agencies, and other organizations for a variety of demographic planning purposes since it provides estimates of demographic data at the TAZ level.

• Comprehensive economic development analysis, infrastructure planning on a local or regional basis, sustainability plans, or local comprehensive planning.
Technical Advisory Committee in their March 2018 meeting authorized the establishment of the *plan2045* Socioeconomic Workgroup. The establishment of this work group has occurred with the development of each long-range transportation plan and includes appointees from local government staff, VDOT, GRTC and DRPT who are qualified to confirm the required data input.

**Schedule**

**Development of the Base-Year 2017 Socioeconomic Data**
Timeframe: April-October 2018
SE Data Workgroup Approval – November 1, 2018
TAC Approval: November 13, 2018

**Development of the Forecast Year 2045 Socioeconomic Data**
Timeframe: November 2018 – March 2019
SE Data Workgroup Approval – Last Week of March (Targeted)
TAC Approval: April 2019
TPO Approval: May 2019
VDOT Submission Deadline: April 2019

**Socioeconomic Data Analysis Report**
Timeframe: April-June 2019
TAC Approval: June 2019
RRTPO Approval: July 2019
plan2045 SE Data Workgroup Members

Town of Ashland
  Nora Amos
  Will Tucker

Charles City County
  Myles Busching

Chesterfield County
  Catherine Bray

Goochland County
  Jo Ann Hunter

Hanover County
  David Maloney

Henrico County
  Seth Humphreys

New Kent County
  Kelli LeDuc

Powhatan County
  Andrew Pompei

City of Richmond
  Will Palmquist
  Travis Bridewell

VDOT
  Enhua Liu
  Jasmine Amanin

DRPT
  Tiffany Dubinsky

GRTC Transit Systems
  Emily DelRoss

Crater PDC/Tri-Cities MPO
  David Hyder

RRTPO/RRPDC Staff
  Sulabh Aryal
  Michael Weaver
  Bilal Damaj
Base Year 2017 Data

Population and Housing

• Bottom up approach used.
• COs and Demos tracking by address.
• Established Total Housing Units
• Vacancy Rates (ACS, Census, Co-Star, Local Knowledge) to establish Households or Occupied Housing Units.
• Average Household Size (ACS, Census, Jurisdictional level, TAZ Level) to establish population in households
• Group Quarter Population – 2012 data as starting point. Local Knowledge and phone calls for updates.
• Household population and group quarter population added to get total population.
• TAZ data aggregated to Jurisdictional total. Jurisdictional data aggregated to get regional total.
## Base Year 2017 Data

### Population and Housing

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Weldon Cooper Estimates 2017</th>
<th>SE Data Base Year 2017</th>
<th>Difference</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles City County</td>
<td>7,151</td>
<td>7,126</td>
<td>(25)</td>
<td>-0.35%</td>
</tr>
<tr>
<td>Chesterfield County</td>
<td>340,020</td>
<td>340,848</td>
<td>828</td>
<td>0.24%</td>
</tr>
<tr>
<td>Goochland County</td>
<td>22,705</td>
<td>23,536</td>
<td>831</td>
<td>3.66%</td>
</tr>
<tr>
<td>Hanover County</td>
<td>106,375</td>
<td>109,595</td>
<td>3,220</td>
<td>3.03%</td>
</tr>
<tr>
<td>Henrico County</td>
<td>324,395</td>
<td>335,283</td>
<td>10,888</td>
<td>3.36%</td>
</tr>
<tr>
<td>New Kent County</td>
<td>21,709</td>
<td>21,347</td>
<td>(362)</td>
<td>-1.67%</td>
</tr>
<tr>
<td>Powhatan County</td>
<td>29,166</td>
<td>29,147</td>
<td>(19)</td>
<td>-0.07%</td>
</tr>
<tr>
<td>Richmond City</td>
<td>222,853</td>
<td>224,798</td>
<td>1,945</td>
<td>0.87%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,074,374</strong></td>
<td><strong>1,092,103</strong></td>
<td><strong>17,729</strong></td>
<td><strong>1.65%</strong></td>
</tr>
</tbody>
</table>

SE Data is through December 31, 2017  
Weldon Cooper Estimates for July 1, 2017  
Hanover County Includes Town of Ashland
Base Year 2017 Data

School and College Enrollment

- Fall 2017 Enrollment Numbers
- K-12 Public Schools - Virginia Department of Education, Jurisdiction School Board
- K-12 Private/Special/Other Schools – 2012 Database as the starting point, greatschools.org, local knowledge, phone calls.
- College and Universities – phone calls.

16.48% of the Regional Population attend K-12 Schools

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>K-12</th>
<th>Colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles City</td>
<td>650</td>
<td>0</td>
</tr>
<tr>
<td>Chesterfield</td>
<td>62,779</td>
<td>20,985</td>
</tr>
<tr>
<td>Goochland</td>
<td>2,925</td>
<td>531</td>
</tr>
<tr>
<td>Hanover</td>
<td>18,226</td>
<td>1,418</td>
</tr>
<tr>
<td>Henrico</td>
<td>57,860</td>
<td>11,490</td>
</tr>
<tr>
<td>New Kent</td>
<td>3,336</td>
<td>100</td>
</tr>
<tr>
<td>Powhatan</td>
<td>4,635</td>
<td>0</td>
</tr>
<tr>
<td>Richmond</td>
<td>29,536</td>
<td>41,746</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>179,947</strong></td>
<td><strong>76,270</strong></td>
</tr>
</tbody>
</table>

RICHMOND REGIONAL TRANSPORTATION PLANNING ORGANIZATION
Base Year 2017 Data

Employment

- Virginia Employment Commission (VEC) Second quarter 2017 data used as the primary source.
- 200-plus employers attempted for phone call/email verification.
- Employers aggregated into headquarters disaggregated into individual locations.
- Employee addresses geocoded, spatially joint and aggregated by TAZs.
- Employment broken down by Retail and Non-Retail
- For Modeling Purposes Employment broken down into 2-Digit NAICS Category (20 Categories).
## Employment

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Employment 2017</th>
<th>% of Regional Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charles City</td>
<td>1,668</td>
<td>0.30%</td>
</tr>
<tr>
<td>Chesterfield</td>
<td>131,120</td>
<td>23.81%</td>
</tr>
<tr>
<td>Goochland</td>
<td>13,966</td>
<td>2.54%</td>
</tr>
<tr>
<td>Hanover</td>
<td>50,625</td>
<td>9.19%</td>
</tr>
<tr>
<td>Henrico</td>
<td>191,240</td>
<td>34.73%</td>
</tr>
<tr>
<td>New Kent</td>
<td>3,956</td>
<td>0.72%</td>
</tr>
<tr>
<td>Powhatan</td>
<td>6,092</td>
<td>1.11%</td>
</tr>
<tr>
<td>Richmond</td>
<td>152,044</td>
<td>27.61%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>550,711</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

### Employment Type

<table>
<thead>
<tr>
<th>Employment Type</th>
<th>Employment 2017</th>
<th>% of Regional Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Government</td>
<td>10,855</td>
<td>1.97%</td>
</tr>
<tr>
<td>Local Government</td>
<td>45,099</td>
<td>8.19%</td>
</tr>
<tr>
<td>Private</td>
<td>461,111</td>
<td>83.73%</td>
</tr>
<tr>
<td>State Government</td>
<td>33,646</td>
<td>6.11%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>550,711</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

### Employment Type

<table>
<thead>
<tr>
<th>Employment Type</th>
<th>Employment 2017</th>
<th>% of Regional Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail</td>
<td>121,941</td>
<td>22.14%</td>
</tr>
<tr>
<td>Non- retail</td>
<td>428,770</td>
<td>77.86%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>550,711</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>
Automobile Registration

- Department of Motor Vehicles (DMV) Automobile Registration Data as the primary source.
- Aim - To get a database which only included registered motorized vehicle for personal use.
- We started by querying out the Garage Jurisdiction (the address where the vehicle registration is sent to the customer. If a post box was provided we also needed a physical address). We assumed that this address is where the vehicle is parked at night. If a vehicle is not registered or registered outside the region but is still parked at the address, we just ignore those.
- All non-motorized vehicles such as any type of trailers, chassis, hearse etc. were eliminated. Similarly customer type – “Individual” and Use type “Personal” were only kept in the database. This filtered out fleets vehicles. Also vehicles with more than 2 Axles were filtered out.
- The data after all the different queries came out good. The registration addresses (almost 900,000 records for the Richmond region) were be geocoded, spatially joint and aggregated by TAZs.
Base Year 2017 Data

Automobile Registration

Total Automobiles – 883,402
0.88 Autos per person (household population)
Autos/ Household – 2.07
# Base Year Data Summary

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Population</th>
<th>Housing</th>
<th>School Enrollment</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In Households</td>
<td>Units</td>
<td>Households</td>
<td>Autos</td>
</tr>
<tr>
<td>Charles City</td>
<td>7,126</td>
<td>3,328</td>
<td>3,044</td>
<td>8,672</td>
</tr>
<tr>
<td>Chesterfield</td>
<td>336,197</td>
<td>132,586</td>
<td>124,595</td>
<td>293,337</td>
</tr>
<tr>
<td>Goochland</td>
<td>22,812</td>
<td>9,679</td>
<td>8,981</td>
<td>23,485</td>
</tr>
<tr>
<td>Hanover</td>
<td>106,677</td>
<td>41,706</td>
<td>40,247</td>
<td>97,794</td>
</tr>
<tr>
<td>Henrico</td>
<td>328,396</td>
<td>135,623</td>
<td>132,416</td>
<td>279,241</td>
</tr>
<tr>
<td>New Kent</td>
<td>20,740</td>
<td>8,389</td>
<td>8,008</td>
<td>21,868</td>
</tr>
<tr>
<td>Powhatan</td>
<td>27,150</td>
<td>11,022</td>
<td>10,442</td>
<td>29,566</td>
</tr>
<tr>
<td>Richmond</td>
<td>210,302</td>
<td>108,043</td>
<td>99,958</td>
<td>129,439</td>
</tr>
<tr>
<td>Total</td>
<td>1,059,400</td>
<td>450,376</td>
<td>427,691</td>
<td>883,402</td>
</tr>
</tbody>
</table>

1 Includes all jurisdictions in Planning District 15 (i.e. TPO study area, rural areas, and Tri-Cities Area MPO portion of Chesterfield).
2 Includes the Town of Ashland
Base Year Data Approval

**plan2045 SE DATA WORKGROUP RECOMMENDATION:**  *plan2045* Socioeconomic Data Workgroup approved the 2017 Base Year Data at the Traffic Analysis Zone (TAZ), Jurisdictional and Regional levels and recommends that the RRTPO Technical Advisory Committee (TAC) approves the data as it is presented to be used in the Richmond/Tri-Cities (RTC) Model update process.

**STAFF RECOMMENDATION:** RRTPO staff concurs with the *plan2045* Socioeconomic Data Workgroup recommendations.

**TAC ACTION REQUESTED:** The TAC is requested to approve the 2017 Base Year Data at the Traffic Analysis Zone (TAZ), Jurisdictional and Regional levels as it is presented to be used in the Richmond/Tri-Cities (RTC) Model update process.
Thank You!

Sulabh Aryal, AICP  
Senior Planner  
saryal@richmondregional.org

9211 Forest Hill Ave., Suite 200  
Richmond, VA 23235  
Phone: (804) 323-2033  
www.richmondregional.org